

REMARKS

Claims 1-11 were previously pending in the application. Claims 2 and 10 are cancelled and new claims 12-15 are added. Therefore, claims 1, 3-9 and 11-15 are presented for consideration.

Claims 1 and 4-8 are rejected as anticipated by SHIMADA et al. 6,147,722. This rejection is respectfully traversed.

Claim 1 is amended to include the subject matter of claim 2. Since SHIMADA et al. is not applied against claim 2, claim 1 as thus amended is believed patentable over SHIMADA et al.

Claims 4-8 depend from claim 1 and further define the invention and are also believed patentable over SHIMADA et al.

In addition, claim 6 provides that the scanning line has a projecting portion overlapping at least one of the contact hole and a region where disclination occurs and shielding light.

By way of example, Figure 1 of the present application shows scanning line 12 having projecting portion 12ba overlapping the contact hole 18 and the region 19 where disclination occurs and shielding light.

The Official Action offers column 7, lines 25-51 of SHIMADA et al. for providing the teaching of claims 6-8. The passage indicated in the Official Action is part of the Summary of the Invention and appears to correspond to the description of

Figures 10 and 12a as disclosed on column 14, lines 14-62 of SHIMADA et al. The above noted passage corresponds to the difference in overlap upstream and downstream of the pixel electrode as represented by D₂ and D₁ in Figure 12a. The overlap is the overlap widths D₁ to D₄ in the direction of source signal line 102 (scanning line). Accordingly, the width of the overlap at the scanning line changes, not that the scanning line has a projecting portion overlapping at least one of the contact hole and the region where disclination occurs as recited in claim 6 of the present application.

Claim 7 provides that the black matrix has a wide portion overlapping a region in the pixel between the data line and the projecting portion. As seen in Figure 1 of the present application, black matrix 16 has a wide portion 16a that overlaps projecting portion 12ba.

SHIMADA et al. neither disclose or suggest that the black matrix has a wide portion or that the wide portion overlaps a region in the pixel between the data line and the projecting portion as recited in claim 7.

Accordingly, claims 6 and 7 are believed patentable regardless of the patentability of the claims from which they depend.

Claims 2, 3, 10 and 11 are rejected as being unpatentable over SHIMADA et al. in view of ZHANG et al. 6,115,088. This rejection is respectfully traversed.

As noted in the Official Action, SHIMADA et al. does not disclose that the insulating film is formed of a plurality of insulating films and the insulating films have openings individually which form the contact hole and a tapered shape as a whole. This shortcoming is attempted to be overcome by combining SHIMADA et al. with ZHANG et al. However, ZHANG et al. do not teach that for which it is offered.

Specifically, claim 1 from which claim 2 depends provides that the insulating layer is formed on the wiring layer and has a contact hole through which an end portion of the wiring is exposed. Claim 2 further provides that the insulating layer is formed of a plurality of laminated insulating films, the insulating films having openings individually which form the contact hole in a tapered shape as a whole.

As seen in Figure 2 of the present application, for example, wiring 14 is connected through contact hole 18 formed in the insulating layer. Insulating layer includes passivation layer 104, color layer 105 and overcoat layer 106. The pixel electrode is then formed on the insulating layer.

Column 5, lines 1-9 of ZHANG et al. indicated in the Official Action as providing the teaching of a multilayer

insulating film includes a gate insulating film 903 and then a lamination of films 904 and 905 through which a contact hole 111 is created and then source line 105 is formed. The plural insulating films of ZHANG et al. neither have openings individually which form a contact hole and a tapered shape as a whole nor have a pixel electrode formed on the insulating layer and electrically connected to an end portion of the wiring through the contact hole as provided in claim 1 of the present application.

As seen in Figure 10 of ZHANG et al. the pixel electrode 107 has an intermediate ITO pattern 106 to function as a shield film for electrically shielding a pixel electrode 107 from the source line 105.

MPEP § 2143.01 states that the mere fact that the references can be combined or modified does not render the result and combination obvious unless the prior art also suggests the desirability of the combination. In re MILLS, 916 F.2d680, 16 USPQ2D 1430 (Fed. Cir. 1990).

Further clarification of how one of ordinary skill in the art would combine SHIMADA et al. and ZHANG et al. to have an insulating layer formed of a plurality of laminated insulating films having openings individually which form the contact hole in a tapered shape as a whole wherein an end portion of a wiring layer is exposed through the contact hole and the pixel electrode

is formed on the insulating layer and electrically connected to an end portion of the wiring layer through the contact hole as recited in claim 1 of the present invention is respectfully requested.

Claim 3 depends from claim 2 and further defines the invention and is also believed patentable over the proposed combination of references.

In addition, claim 3 provides that the insulating film includes a passivation film formed on a switching element, a color layer formed on the passivation film and a flattening film formed on the passivation film and color layer. Claim 3 also provides that the contact hole includes openings formed in the passivation film, the color layer and the flattening film respectively. Claim 3 further provides that an opening is formed in a tapered shape as a whole.

Applicant is unable to find reference to the color layer, passivation film or a flattening film in ZHANG et al. The color layer 146 of SHIMADA et al. overlies the contact hole, not that the contact hole includes openings formed in the passivation film, the color layer and the flattening film as recited in claim 3 of the present application. The above-noted features are missing from each of the references, or absent from the combination, and thus are not obvious to one having ordinary skill in the art.

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Claim 9 is rejected as unpatentable over SHIMADA et al.
This rejection is respectfully traversed.

The comments above regarding the placement of the insulating layer with respect to the contact hole and pixel electrode as set forth above regarding claim 1 are equally applicable to claim 9.

Claims 10 and 11 depend from claim 9 and further define the invention and are believed patentable over the combination of references.

New claim 12 provides that the black matrix overlaps an entirety of the data lines as seen in Figure 1 of the present application. The proposed combination of references does not teach this feature.

New claim 13 provides that the black matrix has a wide portion overlapping a region in the pixel between the data line and the projecting portion. The comments above regarding claim 7 are equally applicable to new claim 13.

New claims 14 and 15 depend from claim 13 and further define the invention and correspond to original claims 2 and 3 and are believed to avoid the rejection under section 103 and are allowable of the art of record.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been

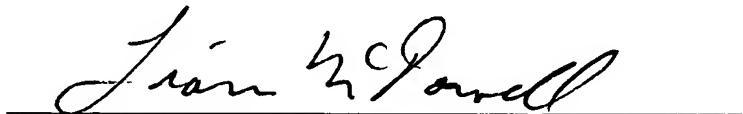
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placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

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